

### REMARKS

In the March 23, 2005 Office Action, all of the claims 1-20 stand rejected in view of prior art. No other objections or rejections were made in the Office Action.

#### *Status of Claims and Amendments*

In response to the March 23, 2005 Office Action, Applicants have amended claims 1, 3-6, 12, and 17-20 as indicated above to further distinguish the present invention over the prior art and to clarify the limitations recited in these claims. Moreover, Applicants have rewritten claims 2 and 16 in independent form. Thus, claims 1-20 are pending, with claims 1, 2, 12, 16 and 20 being the only independent claims. Reexamination and reconsideration of the pending claims are respectfully requested in view of above amendments and the following comments.

#### *Rejections - 35 U.S.C. § 102*

In paragraphs 1-12 of the Office Action, claims 1-20 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,319,930 to Shinzawa et al. (hereinafter referred as "Shinzawa et al. patent"). In response, Applicants have amended independent claims 1, 12 and 20 to clearly define the present invention over the prior art of record. Moreover, regarding claims 2 and 16, Applicants respectfully disagree with the assertion of the Office Action that the limitations recited in these claims are anticipated by the Shinzawa et al. patent. Thus, Applicants have rewritten claims 2 and 16 in independent form. Applicants respectfully submit the limitations recited in independent claims 1, 12 and 20, now amended, and independent claims 2 and 16 are not disclosed or suggested by the Shinzawa et al. patent or any other prior art of record.

In particular, independent claims 1, 12 and 20, now amended, clearly require that the regeneration timing be determined when the exhaust gas temperature is equal to or greater

than the prescribed temperature *regardless* of the quantity of particulate matter detected in the accumulated particulate quantity section. Clearly, this structure is *not* disclosed or suggested by the Shinzawa et al. patent or any other prior art of record.

In the Shinzawa et al. patent, the initiation of the regeneration timing is determined (i.e., the regeneration flag F is set to 1) in step 2S14 of the flowchart of Figure 10B when the accumulated particulate amount SUM is equal to or greater than the reference value in step 2S13 of Figure 10B. This accumulated particulate amount SUM in the Shinzawa et al. patent is derived by adding a collected particulate amount per unit time  $\Delta PCT1$  and subtracting a reburnt particulate amount per unit time  $\Delta PCT2$  (column 12, lines 21-30). Although the exhaust temperature TIN is detected in step S216 of Figure 10B in the Shinzawa et al. patent, this step 2S16 is only executed *after* the regeneration timing is determined (i.e., the regeneration flag F is 1) in step 2S2 of the flowchart of Figure 10A. Therefore, if the regeneration timing is not determined in step 2S2 (i.e., if the accumulated particulate amount SUM was less than the reference value in step 2S13 in the previous control cycle) in the Shinzawa et al. patent, the regeneration of the particulate filter is not initiated. In such case, the exhaust gas temperature TIN is *not* considered *at all* in the Shinzawa et al. patent in determining the regeneration timing of the particulate filter. In other words, in the Shinzawa et al. patent, the accumulated particulate amount SUM reaching the reference value is a primary condition for initiating the regeneration because the regeneration timing is *not* determined in step 2S2 *unless* the accumulated particulate amount SUM reaches the reference value in step 2S13. Thus, the Shinzawa et al. patent *fails* to disclose or suggest determining the regeneration timing when the exhaust gas temperature is equal to or greater than the prescribed temperature *regardless* of the quantity of particulate matter (i.e., the accumulated particulate amount SUM) as recited in independent claims 1, 12 and 20.

It is well settled under U.S. patent law that for a reference to anticipate a claim, the reference must disclose *each* and *every* element of the claim within the reference. Therefore, Applicants respectfully submit that independent claims 1, 12 and 20, as now amended, are not anticipated by the Shinzawa et al. patent or any other the prior art of record. Withdrawal of this rejection is respectfully requested.

Moreover, Applicants believe that the dependent claims 4-11, 13-15, 18 and 19 are also allowable over the prior art of record in that they depend from independent claim 1, 12 or 20 and therefore are allowable for the reasons stated above. Also, the dependent claims 4-11, 13-15, 18 and 19 are further allowable because they include additional limitations. Thus, Applicants believe that since the prior art of record does not anticipate the independent claims 1, 12 and 20, neither does the prior art anticipate the dependent claims. The dependent claims 4-6, 18 and 19 have been amended to further clarify the language of these claims to make these claims easier to read and understand.

Regarding claims 2 and 16, Applicants respectfully disagree with the assertion of the Office Action that the Shinzawa et al. patent discloses the limitations recited in these claims. Thus, Applicants have amended claims 2 and 16 to rewrite these claims in independent form, and also to further clarify the language of the claims to make these claims easier to read and understand.

More specifically, independent claims 2 and 16 clearly recite two situations or conditions when the regeneration timing is determined:

- (1) during times when the accumulated particulate quantity reaches a prescribed quantity, and

- (2) during times *when the accumulated particulate quantity is less than the prescribed quantity* and an exhaust gas temperature is equal to or greater than a prescribed temperature.

Clearly, this arrangement recited in claims 2 and 16 is not disclosed or suggested by the Shinzawa et al. patent or any other prior art of record. As mentioned above, in the Shinzawa et al. patent, the regeneration timing is *not* determined in step 2S2 of Figure 10A *unless* the accumulated particulate quantity (i.e., the accumulated particulate amount SUM) reaches the reference value in step 2S13 of Figure 10B. Therefore, the Shinzawa et al. patent *fails* to disclose or suggest determining the regeneration timing during times *when the accumulated particulate quantity is less than the prescribed quantity* and an exhaust gas temperature is equal to or greater than a prescribed temperature as recited in independent claims 2 and 16.

As mentioned above, for a reference to anticipate a claim under U.S. patent law, the reference must disclose *each* and *every* element of the claim within the reference. Therefore, Applicants respectfully submit that independent claims 2 and 16 are not anticipated by the Shinzawa et al. patent or any other the prior art of record. Withdrawal of this rejection is respectfully requested.

Moreover, Applicants believe that the dependent claims 3 and 17 are also allowable over the prior art of record in that they depend from independent claims 1 and 16, respectively, and therefore are allowable for the reasons stated above. Also, the dependent claims 3 and 17 are further allowable because they include additional limitations. Thus, Applicants believe that since the prior art of record does not anticipate the independent claims 2 and 16, neither does the prior art anticipate the dependent claims. The dependent claims 3

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and 17 have been amended to further clarify the language of these claims to make these claims easier to read and understand.

Applicants respectfully request withdrawal of the rejections.

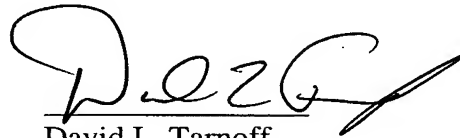
*Prior Art Citation*

In the Office Action, additional prior art references were made of record. Applicants believe that these references do not render the claimed invention obvious.

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In view of the foregoing amendment and comments, Applicants respectfully assert that claims 1-20 are now in condition for allowance. Reexamination and reconsideration of the pending claims are respectfully requested.

Respectfully submitted,



David L. Tarnoff  
Reg. No. 32,383

SHINJYU GLOBAL IP COUNSELORS, LLP  
1233 Twentieth Street, NW, Suite 700  
Washington, DC 20036  
(202)-293-0444  
Dated: 3-24-05

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